

REMARKS

Claims 1-73 are pending in the case. Claims 1, 34-35, 37, 39, 49, 50 to 58, 60, 62, and 72-73 have been amended.

The Office Action has rejected claims 1, 4-5, 20-22, 24, 26-27, 34, 37-38, 49-51, 53, 55-57, 60-61 and 72-73 under 35 U.S.C. § 102(e) as being anticipated by Johansson et al. (U.S. Patent No. 6,275,798) for the reasons set forth on pages 2 through 4 of the Office Action.

The Office Action has rejected claims 2-3, 7-10, 23, 28-30, 32-33, 35-36, 40-43, 52, 58-59 and 63-66 under 35 U.S.C. § 103(a) as being unpatentable over Johansson in view of Takahashi (U.S. Patent No. 6,272,459) for the reasons set forth on pages 4 through 6 of the Office Action.

The Office Action has rejected claims 6, 12-13, 15-16, 18-19, 25, 31, 39, 45-46, 48, 54, 62, 68-69 and 71 under 35 U.S.C. § 103(a) as being unpatentable over Johansson in view of Jarvinen et al. (U.S. Patent No. 5,960,389) for the reasons set forth on pages 6 through 8 of the Office Action.

The Office Action has rejected claims 11, 14, 17, 44, 47, 67 and 70 under 35 U.S.C. § 103(a) as being unpatentable over Johansson in view of Takahashi, and further in view of Jarvinen et al. for the reasons set forth on pages 8 to 9 of the Office Action.

Reconsideration of the subject application in view of the following remarks is respectfully requested.

The primary reference for all of the rejections in the office action is Johansson (U.S. Patent No. 6,275,798 B1). With all due respect, the Applicants urge that the Office Action has misconstrued the Johansson reference, because it does not teach or suggest,

among other things, any voiceless decoding operation or unit for received feature parameters where speech signals are classified as being a voice period or in a voice-less period, a voice-less-part decoding unit, or a voice-less decoding circuit.

Each of the independent claims recite a device or method that includes the limitations of: "speech signals have been classified as a voice period or a voiceless period" (claims 1, 35, 37, 39, 49, 50, 57-58, 60, 62, 72-73), "a voice-less decoding circuit" (claim 1), or a voice-less part decoding unit (claims 2, 4, 6, and 20-21). Johansson, to the contrary, does not teach or disclose these limitations, and in fact, actively discourages such classification or devices at column 2, lines 1 to 13. Instead, Johansson rejects the notion of smoothing a feature parameter for speech signals classified as a voiceless period in favor of a mixing modifier that is applied to all energy parameters for reconstructing the speech signal.

Johansson shows an energy parameter modifier that attempts to use a "mix factor" to determine the degree to which energy contours should be smoothed. A stationary measure (diff) shown in equation 1 indicates how much the line spectrum frequency (LSF) for a current sub-frame differs from the average line spectrum frequency spectrum as averaged over a predetermined number of previous frames (see col. 4, lines 36-39). LSF parameters are short term predictor (STP) parameters that describe the vocal tract (see col. 1, lines 20-30 and col. 3, lines 4 to 10). Equation 2 introduces a mix factor, k , which is defined by the diff measure. Col. 4, line 55. As described therein, when mix factor k is mostly equal to 1 there will be no energy contour smoothing for voice speech and when the mix factor k is mostly equal to 0, there will be all energy contour smoothing for stationary background noise. Mix factor k is applied to produce a modified energy parameter from a time averaged version of the received energy parameters (e.g, fixed codebook gain, long term predictor gain, and

frame energy) (see col. 4, line 66 to col. 5, line 18). As shown by equation 4, if k is low, then averaged energy parameters are used to smooth the energy contour, whereas if k is high, then current energy values are used, and if k is a middling value, then a mix of current energy values and modified energy parameters are used.

In the present application, the classification of speech signals as a voiceless period or a voice period is performed – a hard decision that determines whether the speech signals being coded is speech or non-speech. As is clear, Johansson has no teaching or disclosure for using received feature parameters for speech signals that have been classified as a voice period or a voiceless period. In fact, Johansson denigrates systems and methods that use such hard decisions and eschews classifying whether received feature parameters are in a voice period or a voiceless period, opting instead to obtain a mixing factor that controls the gradual switching of between an averaged energy signal and a current energy signal. Hence in Johansson the voice signals are never classified as being a voice period or a voiceless period, and consequently, there is no voiceless decoder circuit or voiceless part decoding unit disclosed in Johansson. To the contrary, the circuit and method in described Johansson continually balances the current energy and modified energy to reconstruct a speech signal, which is not compatible with such a hard decision or the classification of speech signals as being a voice period or a voiceless period. In contrast, the independent claims of the present invention recites “speech signals classified as being a voice-less period” or otherwise recites “a voice-less part decoding unit” or a “voiceless decoding circuit”.

Independent claims 1, 35, 37, 39, 49, 50, 57-58, 60, 62, 72-73 and 73 each recite speech signals “classified as being a voice period or in a voice-less period”. Claim 1 recites “a voice-less decoding circuit, and claims 2, 4, 6, and 20-21 recited a “voice-less

part decoding unit". As regards the rejections of claims 1, 4-5, 20-22, 24, 26-27, 34, 37-38, 49-51, 53, 55-57, 60-61, and 72-73 under 35 USC § 102, for the reasons given above, Johansson is deficient as it does not anywhere teach or suggest these recitations. As for the Office Action's rejection of claims 2-3, 7-10, 23, 28-30, 32-33, 35-36, 40-43, 52, 58-59, and 63-66; claims 6, 12-13, 15-16, 18-19, 25, 31, 39, 45-46, 48, 54, 62, 68-69, and 71 (Johansson in view of Jarvinen); and claims 11, 14, 17, 44, 47, 67, and 70 (Johansson in view of Takashi and further in view of Jarvinen) under 35 USC § 103, nothing in the Takahashi or Jarvinen references, alone or in combination, make up for the deficiencies of the Johansson reference as applied to the independent claims of the present invention

In view of the above amendment, applicant believes the pending application is in condition for allowance. Reconsideration is respectfully requested.

No fee is believed to be due for this Amendment. Should any fees be required, please charge such fees to Deposit Account No. 50-2215.

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Respectfully submitted,

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